

RESTRICTED

RECORD COPY

RECORD COPY

RECORD COPY



CIG

RECORD COPY



DOCUMENTS BRANCH
PERIODICAL ABSTRACTS

Number 1

2 Apr 1947

RECORD COPY

RECORD COPY

RECORD COPY

Prepared By

Documents Branch

CENTRAL INTELLIGENCE GROUP

2430 E Street, N. W.
Washington, D. C.

DOCUMENT NO. 01
NO CHANGE IN CLASS 1
 DECLASSIFIED
CLASS. CHANGED TO: 13 S 0
NEXT REVIEW DATE:
AUTH: HR 244
DATE 8 1980 REVIEWER: 010313
33

RESTRICTED

WARNING

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE ACT, 50 U.S.C., 31 AND 32, AS AMENDED. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO ANY UNAUTHORIZED PERSON IS PROHIBITED WITHOUT SPECIAL AUTHORITY FROM THE DIRECTOR OF CENTRAL INTELLIGENCE.

~~RESTRICTED~~

~~SECRET~~

C I G

Documents Branch

P E R I O D I C A L , A B S T R A C T S

Number 1

2 Apr 1947

Prepared by

Documents Branch
CENTRAL INTELLIGENCE GROUP
2430 E Street, N. W.
Washington, D.C.

~~RESTRICTED~~

RESTRICTED

This publication contains titles and abstracts of Japanese periodicals. Each periodical is abstracted as a whole and its issues summarized with a listing of volume and issue or report numbers and the dates of publication. Each periodical and each title and abstract has also been assigned an Index Number at the right in accordance with the Basic Intelligence Directive. Due to limitations of personnel and volume of material, it has been found necessary to require local agencies interested in any item covered by these abstracts to first send a representative to Sixth Floor, 1340 L Street, N. W., in order to preview the article prior to formal request for further translation. Formal requests should be made through the Office of Collection and Dissemination, CIG, 2430 E Street, N. W., Washington, D. C.

Distribution List

State Dept (IAD)	4
Library of Congress	1
Dept of Commerce (Publications Board)	2
AID	1
CICNFE	10
OCCmlC	1
OQMG	1
OCSigO	3
OCE	2
OCO	1
OCT	2
AAF	21
AGF	10
ICAF	1
NWC	1
NavWC	1
AFSC	1
ID	6
CINCPACFLT	5
COMNAVJAP	5
US NAVAL ATTACHE Nanking	2
COMNAVWESPAC	5
ONR	2
NRL	2
NOL	2
BUSHIPS	5
BUORD	5
BUAER	5
BU Yards & Docks	5
USMC	2
Op-20-2 (via Op-32 Y-1)	2
ONI	4
Op-34 H-10	1
OP-413 B	1
Manhattan Engineering District	1
CIG	3
DB	60
Total	186

RESTRICTED

RESTRICTED

C I G

Documents Branch

PERIODICAL ABSTRACTS

* * *

TOKYO TEIKOKU DAIGAKU KOKU KENKYUJO HOKOKU
"Reports of the Aeronautical Research Institute,
Tokyo Imperial University"

2302.0800

Published as a series of research reports in sequence by report numbers at irregular intervals. Included are reports on aeronautics, metallurgy, dynamics and related subjects in English, German or Japanese prepared by members of the Institute. Reports No 186 to 325 inclusive, Dec 1939 to Feb 1945.

The following are titles and abstracts of all reports published between Feb 1941 and Feb 1945. Certain titles, originally rendered in English by the authors, have been modified to correspond with American technical terminology.

Feb 1941 - Vol XVI, No 204

"Numerical Calculation by JS Diagram of Power Variation with Altitude of a Naturally Aspirated Engine" 2302.0200

Changes with altitude on the theoretical IMEP of a naturally aspirated engine, calculated from sea level to 15,000 meters by JS diagrams of air and combustion gases. 31 pp.

Mar 1941 - Vol XVI, No 205

"On the Subsonic Flow of a Compressible Fluid Past a Symmetrical Joukowski Airfoil". 92 pp. 2302.0200

Apr 1941 - Vol XVI, No 206

"Research on Propeller Flutter, Part III"
Vibration and sound of a revolving thin plate; acoustical model of propeller flutter. 33 pp. 2302.0608

RESTRICTED

Apr 1941, Vol XVI, No 207

"Nature of a Satellite in the X-ray Pattern of Alpha-Crystals, and the Differentiation of a New-Phase Alpha-Prime by the Surface Recrystallization Method in Certain Ternary Alloys, Part I, The Iron-Nickel-Aluminum System." 36 pp.

4205.0225

4205.0400

4205.0300

May 1941 - Vol XVI, No 208

"Characteristics of an Airfoil with Discontinuities Along the Span with Special Reference to the Effect of Cutouts" 2302.0800

Methods of calculating the lift distribution of an airfoil with discontinuities, characteristics of an airfoil with longitudinal slots, a divided airfoil and an airfoil with cutout, and characteristics of an airfoil with rectangular cutout. 56 pp.

May 1941 - Vol XVI, No 209

"An X-ray Study of the Mechanism of the Splitting Phenomenon of Alpha-Crystals in the Interiors of Some Ternary Alloys, Part I, The Iron-Nickel-Aluminum System." 33 pp.

4205.0225

4205.0400

4205.0300

May 1941 - Vol XVI, No 210

"Resistance welding of Light Alloys" L205.0301
Explanation of the electric resistance welding of light metals and results of experiments. 182 pp.

Aug 1941 - Vol XVI, No 211

"On the Theory of the Turbulent Boundary Layer on a Flat Plate"

8710

The mean vortex theory on turbulent flow in which the turbulence is considered to be composed of very fine vortices which decay or grow. 9 pp.

Aug 1941 - Vol XVII, No 212

"The Coupling of the Propeller Blade Bending Vibration with the Crankshaft Twisting Vibration in a V-Type Engine." 43 pp.

2302.0608

- 2 -

RESTRICTED

RESTRICTED

Sep 1941 - Vol XVII, No 213

"Theory of the Vibration of a Body under Forces of Different Periods" 8710

Theoretical interpretation of previous experiments concerning the forced vibration of varying frequencies, using operational calculus and Fresnel's integrals. 47 pp.

Sep 1941 - Vol XVII, No 214

"On the Resistance of an Airfoil in a High-Speed Stream with Special Reference to Shock Waves" 2302.0800
19 pp.

Oct 1941 - Vol XVII, No 215

8/10

"The Boundary Layer of a Flat Plate in an Incompressible Fluid" 27 pp.

Oct 1941 - Vol XVII, No 216

"On the Subsonic Flow of a Compressible Fluid Past a General Joukowski Profile" 8710
79 pp.

Oct 1941 - Vol XVII, No 217

"On the Phenomena of Ice Formation" 2302.0000
Method of studying ice formation on aircraft in flight and results of experiments with a wind tunnel of the Goettingen type with special experimental chamber. 15 pp.

Nov 1941 - Vol XVII, No 218

"On the Reaction between a Pressurized Circular Cylindrical Shell and Its Frame" 8710
Calculation of the deformation shearing forces, bending movements of a cylindrical shell with internal pressure equipped with an elastic circular frame, one edge of the flange being jointed to the shell. 9 pp.

Nov 1941 - Vol XVII, No 219

"On the Circular Plate under Uniform Pressure Constrained Arbitrarily at the Boundary" 8710
Solution of the deformation of a circular plate under uniform pressure. 15 pp.

RESTRICTED

Nov 1941 - Vol XVII, No 220

"On Cam Forms which Induce No Surging in Valve Springs" B710
 Explanation of method of building up cam forms.
 10 pp.

Nov 1941 - Vol XVII, No 221

"Characteristics of the Cooling System, Part I"
 Analysis of the problem and comparison of theoretical calculations with experimental results. 11 pp.

2305.0200

Dec 1941 - Vol XVII, No 222

"Research on Low Temperature Annealing of Cold-Worked Metals and Alloys, Report No 1"
 Experimental research on the method of manufacturing high-tensile copper cadmium wire. 32 pp.

4205.0500
4205.0902

Jan 1942 - Vol XVII, No 223

"Research on the Al-Zn-Mg Alloy 'SSD'" 23 pp.

4205.0300
4205.0500

Apr 1942 - Vol XVII, No 224

"Temperature Rise of Brake Drum During Landing Run"
 Method of calculating temperature rise of brake drum. 23 pp.

2302.0100

Apr 1942 - Vol XVII, No 225

"Changes in Visual Perception at High Altitudes"
 Studies on changes in visual fields, visual acuity and brightness-discrimination at high altitudes. 18 pp.

5305

Apr 1942 - Vol XVII, No 226

"Research on the Low-Temperature Annealing of Cold-Worked Metals and Alloys, Report No 2"
 Experimental research on the chromium-vanadium steel wire. 27 pp.

4205.0239

RESTRICTED

Apr 1942 - Vol XVII, No 227

"Vibration of an Elastic Wing Caused by Transient Forces" 2302.0800

Study of special wing vibrations caused by transient external forces, such as a gust of wind or landing by using the heaviside operational method. 34 pp.

Apr 1942 - Vol XVII, No 228

"Design of Symmetrical Airfoil Sections Suitable for High Speeds" 2302.0800
17 pp.

Apr 1942 - Vol XVII, No 229

"Effect of Acceleration on the Maze-Learning Ability of Albino Rats" 22 pp.

May 1942 - Vol XVII, No 230

"The Study on Recrystallization Temperature of Binary Alloys, Part No 1, Two-phase Alloys" 4205.0902
4205.0400

Experiments with pure Al, Mg and Cu, and with binary alloys of these primary metals, by annealing, cold-rolling, and heating and subsequent testing of recrystallization and dead-softening temperatures and softening range. 54 pp.

Jun 1942 - Vol XVIII, No 231

"On the Additional Terms in the Equilibrium Equations of Thin Elastic Plates which Undergo Finite Deformations" 8710
14 pp.

Jun 1942 - Vol XVIII, No 232

"Characteristics of the Cooling System, Part II" 2302.0200
Relationship between the theory of radiators and experiments on radiators after installation.
10 pp.

Jul 1942 - Vol XVIII, No 233

"A Photographic Study of the Flow Patterns of a Centrifugal Supercharger (Model Experiment)" 2302.0200
55 pp.

RESTRICTED

Jul 1942 - Vol XVIII, No 234

"Flexural-Torsional Vibrations of a Wing in Flutter Condition, Solved by Matrix-Operational Methods" 2302.0800
 31 pp.

Jul 1942 - Vol XVIII, No 235

"Exhaust Gas Turbo-Supercharger or Rocket Action of Exhaust Gas" 8 pp. 2302.0405
 2302.0200
 0407.0700

Jul 1942 - Vol XVIII, No 236

"Characteristics of an Aero-Engine Employing Dynamic Pressure due to Air Speed" 16 pp. 2302.0200

Jul 1942 - Vol XVIII, No 237

"Experimental Study on the formation of Shock Waves" 8710
 Airfoils tested in closed and open-type wind tunnels, and photographs of shock waves obtained.
 20 pp.

Aug 1942 - Vol XVIII, No 238

"Spectroscopic Study of Engine Combustion, Report No 1" 4406.0400
 The emission spectra of engine combustion. 22 pp.

Sep 1942 - Vol XVIII, No 239

"Characteristics of the Cooling System, Part III" 2302.0200
 Relationship between the characteristics of a radiator prior to and after installation. 25 pp.

Sep 1942 - Vol XVIII, No 240

"Research on Hydraulic Load Testing of Aircraft, Report No 1" 2302.0800
 Fundamental experiments on the loading jack.
 25 pp.

Sep 1942 - Vol, XVIII, No 241

"Effect of Acceleration Upon Living Bodies with Special Reference to its Effects upon Small Animals" 5305
 2,000 mice exposed to acceleration of 3 to 63 G's. 25 pp.

RESTRICTED

Oct 1942 - Vol XVIII, No 242

"Experimental Research on Combustion Temperature in Engine Cylinders" 21 pp. 4406.0400

Nov 1942 - Vol XVIII, No 243

"Factors Affecting the Lateral Stability of an Airplane" 2302.0800

Showing how lateral stability is affected by changes in vertical tail volume, dihedral, radius of gyration, wing loading, altitude of flight, etc. 39 pp.

Nov 1942 - Vol XVIII, No 244

"Air-tight Oxygen Chamber" 2302.0609
 Method of countering the effect of atmosphere at high altitudes on the human body by use of air-tight oxygen chamber. 19 pp. 2302.0611
 5305

Dec 1942 - Vol XVIII, No 245

"Characteristics of the Engine Air-Cooling System Part I, Fundamentals" 2302.0200

Part I, Fundamentals" 23 pp.

Dec 1942 - Vol XVIII, No 246

"Characteristics of the Engine Air Cooling System when installed Part II" 2302.0200

Overall performance of the aero-engine, using an engine air-cooling system of the parallel-counter-flow type. 20 pp.

Dec 1942 - Vol XVIII, No 247

"Characteristics of the Air-Cooling System when installed Part III" 2302.0200

Comparison of the 3 cooling systems-- the cross-flow type, the parallel-counter-flow type, and cooling medium type. 7 pp.

Dec 1942 - Vol XVIII, No 248

"Characteristics of the Cooling System, Part IV" 2302.0200
 Data on drag-coefficients obtained from full scale models.

RESTRICTED

Dec 1942 - Vol XVIII, No 249

"Performances of Cooling Systems of Honey-Comb Type" 2302.0200
 7 pp.

Jan 1943 - Vol XIX, No 250

"Design of Airfoils in which the Transition of the Boundary Layer Is Delayed" 2302.0800
 47 pp.

Jan 1943 - Vol XIX, No 251

"Laminar Boundary Layer in Compressible Fluids" 8710
 Theoretical calculation of moment for airfoils
 NACA 0010 and LB 24. 24 pp.

Apr 1943 - Vol XIX, No 252

"Performance Tests for a Centrifugal Supercharger, fitted with Diffuser Guide Vanes of the Airfoil Section Type" 2302.0200
 2302.0607
 80 pp.

Apr 1943 - Vol XIX, No 253

"Masking Effect of Noise, Part I, The Masking Effect of Noise with a Continuous Spectrum" 8710
 33 pp.

Jun 1943 - Vol XIX, No 254

"Various Production Methods for Strong Wrought-Aluminum Alloys." 4205.0301
 27 pp.

Jun 1943 - Vol XIX, No 255

Theoretical Considerations on Adiabatic Temperature Efficiencies, Overall Adiabatic Efficiencies and the Coefficients of Slip for a Centrifugal Supercharger 14 pp. 2302.0200

Jul 1943 - Vol XIX, No 256

"Season Cracking of Al-Zn-Cu-Alloys"
 Experiments with aluminum alloy containing 9% zinc, 2% magnesium and 3% copper. Investigation of relation between season cracking and corrosion with special study of properties of the crystal boundaries of the alloy. 40 pp. 4205.0301
 4205.0500

RESTRICTED

RESTRICTED

Jul 1943 - Vol XIX, No 257

"Spectroscopic Study of Engine Combustion,
Report No 2"
Absorption spectra of gaseous mixtures in
engine cylinder. 14 pp.

4406.0400

Jul 1943 - Vol XIX, No 258

"On the Performance of Engine-Air-Cooling Systems,
Part V"
Effect of the area ratio of the cooler cores.
5 pp.

2302.0200

Jul 1943 - Vol XIX, No 259

"Plane Stress in Orthogonal Aeolotropic Plates"
28 pp.

6710

Jul 1943 - Vol XIX, No 260

"Performances of Cooling Systems with a High
Temperature Efficiency" 14 pp.

2302.0200

Jul 1943 - Vol XIX, No 261

"A Photographic Study of the Flow Patterns at a
Centrifugal Supercharger Inlet (Model Experiment)"
11 pp.

2302.0200

2302.0607

Jul 1943 - Vol XIX, No 262

"Theoretical Investigation of Blower-Cooling of
Aero-Engines" 19 pp.

2302.0200

Jul 1943 - Vol XIX, No 263

"Stress Distribution on an Annular Thin Plate under
Normal Pressure and Uniform Shearing Load Along
Its Inner Boundary" 15 pp.

8/10

Jul 1943 - Vol XIX, No 264

"Torsional Buckling of a Cylindrical Shell under
Internal or External Pressure" 12 pp.

8/10

RESTRICTED

Aug 1943 - Vol XIX, No 265

"Structure of Shock Waves"

Tests of shock waves before pitot tubes, Laval nozzles and on airfoils. 100 pp.

8710

Aug 1943 - Vol XIX, No 266

"Free Vibration of the Propellor Blade" 4 pp.

2302.0608

Aug 1943 - Vol XIX, No 267

"Numerical Calculation of Power Variation with Altitude in a Gear-Driven Super-Charged Engine" 71 pp.

2302.0200

Aug 1943 - Vol XX, No 268

"Theoretical Calculation of Fuel Consumption of Aeroengines at High Altitude, Report No 1" 18 pp.

2302.0200

Aug 1943 - Vol XX, No 269

"Theoretical Calculation of Fuel Consumption of Aeroengines at High Altitude, Report No 2" Relation between the theoretical equation of indicated mean effective pressure of a supercharged engine with air-fuel ratio and the changes in indicated thermal efficiency with altitude, boost pressure and temperature.

2302.0200

Sep 1943 - Vol XX, No 270

"Complete Analysis of Dynamic Stability Formulae with Some Practical Examples"

8710

Sep 1943 - Vol XX, No 271

"The Problem of Unsteady Vibration Near the Critical Point of Wing Flutter" 37 pp.

2302.0800

Sep 1943 - Vol XX, No 272

"Measurement of High-Speed Air Flow by Mach-Zehnder Interferometer" 24 pp.

8710

RESTRICTED

Sep 1943 - Vol XX, No 273

"Theoretical Calculations of Fuel Consumption at Normal Altitudes" 15 pp.	2302.0100
	2302.0200
	4203.0501

Nov 1943 - Vol XX, No 274

"Methods of Measuring the Viscosity and Plasticity of Lubricating Oil" 35 pp.	8710
--	------

Nov 1943 - Vol XX, No 275

"Velocity Distribution Around an Airfoil at High Speeds, I" 25 pp.	2302.0300
---	-----------

Dec 1943 - Vol XX, No 276

"Research on Oiliness Testers, Part I" Oiliness tester of pendulum type with test results. 30 pp.	4203.0500
---	-----------

Jan 1944 - Vol XX, No 277

"Estimation of Aero Engine Performance, Part I, High Altitude Performance" 99 pp.	2302.0200
	2302.0100

Jan 1944 - Vol XX, No 278

"Model Experiments of Blower Cooling of Aero-Engines" 21 pp.	2302.0200
---	-----------

Jan 1944 - Vol XX, No 279

"Characteristics of the Cooling System, Part V, Cooling System Installed in the wings" 23 pp.	2302.0200
--	-----------

Jan 1944 - Vol XX, No 280

"A Few Experiments on Mg-Mn System: A Deduced Mg-Mn Equilibrium Diagram" 21 pp.	4205.0300
	4205.0400

Jan 1944 - Vol XX, No 281

"The Dissolving Velocity Constant of Iron into Copper and Copper-Lead Alloys" 18 pp.	4205.0500
	4205.0225

RESTRICTED

Jan 1944 - Vol XX, No 282

"The Influence of Elastic Strain on the Age-Hardening of Duralumins" 11 pp. 4205.0301

Feb 1944 - Vol XX, No 283

"Measurement of Pressure Distribution of an Airfoil in Sub-Sonic Flow by Mach-Zehnder Interferometer" 11 pp. 2302.0800

Mar 1944 - Vol XX, No 284

"Performance of Air Cooling Systems, Part IV"
Tests on the performance of the parallel-flow type,
and the experimental cross-flow type air cooling
systems. 11 pp. 2302.0200

Mar 1944 - Vol XX, No 285

"Leakages from a Pressurized Cabin" 14 pp. 2302.0609

Mar 1944 - Vol XXI, No 286

"A Photographic Study of the Flow Patterns in a Centrifugal Supercharger (Model Experiment)
'Schlieren' Method" 29 pp. 2302.0200

Mar 1944 - Vol XXI, No 287

"Research on the Performance of a Centrifugal Supercharger Fitted with Diffuser Guide Vanes of the Airfoil Section Type with Special Reference to the Effect of the Number of Guide Vanes on Performance" 2302.0200

Mar 1944 - Vol XXI, No 288

"Influence of Various Elements upon Tempered Hardness of Super Duralumins" 19 pp. 4205.0301

Apr 1944 - Vol XXI, No 289

"Calculation and Improvement of Turns" 75 pp. 2302.0100

Apr 1944 - Vol XXI, No 290

"Velocity Distribution Around an Airfoil at High Speeds" 55 pp. 2302.0800

RESTRICTED

May 1944 - Vol XXI, No 291

"The Effect of Low-Temperature Annealing on the Prevention of Grain-Growth"
 Research on the Uniforming of Crystal Grains.
 28 pp.

4205.0000

May 1944 - Vol XXI, No 292

"Effect of Vibration on the Human Body" 43 pp.

5305

May 1944 - Vol XXI, No 293

"Performance of Cooling Systems, Report No 7:
 Performance of the Honeycomb-Type Cooling System"
 5 pp.

2302.0200

May 1944 - Vol XXI, No 294

"Theory of Two-Dimensional Airfoils in Compressible Fluids" 48 pp.

2302.0800

May 1944 - Vol XXI, No 295

"Performance of Cooling Systems, Report No 8:
 Performance of Cooling System with Indirect Cooling Fin" 6 pp.

2302.0200

May 1944 - Vol XXI, No 296

"Elasticity of an Aneroid Gauge Membrane" 13 pp.

8710

Jun 1944 - Vol XXI No 297

"Analysis of the Quaternary Phase Diagrams" 47 pp.

8710

Jun 1944 - Vol XXI, No 298

"Estimation of Heat Transfer in a Liquid-Cooled Engine Cylinder" 7 pp.

2302.0200

Jun 1944 - Vol XXI, No 299

"Characteristics of the Cooling System, Part VI"
 Research on water, oil, and air-cooling systems. 24 pp.

2302.0200

RESTRICTED

Jul 1944 - Vol XXII, No 300

"Valve Vibration in Aero-Engines" 9 pp. 2302.0200

Aug 1944 - Vol XXII, No 301

"Performance of Air Cooling Systems, Part VI"
Performance when the resistance of the air ducts
is taken into consideration. 2302.0200

Aug 1944 - Vol XXII, No 302

"The Boundary Layer of a Flat Plate in a Compressible
Fluid" 27 pp. 8710

Aug 1944 - Vol XXII, No 303

"Study of Rust-Proof Magnesium Alloy CZM, Part I"
"Basic research on rust-proof alloys, Part II, the
Rust-Proof Qualities of Cd-Zn-Mn Magnesium Alloy" 4205.0300

Aug 1944 - Vol XXII, No 304

"Studies on Lubricant Additives, Part I, the Effect
of High-Molecular Weight Ketones" 4 pp. 4203.0506

Aug 1944 - Vol XXII, No 305

"Calculation of Lift Distribution of a Monoplane Wing" 2302.0800
32 pp.

Aug 1944 - Vol XXII, No 306

"Research on Rust-Proof Magnesium Alloy CZM, Part 3,
Characteristics of CZM Castings" 18 pp. 4205.0300

Aug 1944 - Vol XXII, No 307

"Effect of Width of the Impeller Outlet Upon the
Centrifugal Supercharger Performance" 22 pp. 2302.0200

Sep 1944 - Vol XXII, No 308

"The Masking Effect of Noise, Part II, The Masking
Effect of Warbling Tone(Radio)" 13 pp. 5305
8360.1200

RESTRICTED

RESTRICTED

Sep 1944 - Vol XXII, No 309

"Research on Lubricant Additives, Part II, The
Detergent Effect of Soap-Type Addition Agents" 6 pp. 4203.0506

Sep 1944 - Vol XXII, No 310

"The Effect on the Human Body of Abrupt Changes of
Atmospheric Pressure" 13 pp. 5305

Sep 1944 - Vol XXII, No 311

"Changing of the air in a Pressurized Cabin and
the Volume of Air Required from the Pressurizer" 10 pp. 5305 2302.0609

Oct 1944 - Vol XXII, No 312

"Research on Rust-Proof Magnesium Alloy C2M, Report
No 3, Part IV, Method of Manufacturing Magnesium
Alloy Plates Suitable for Cold-Working" 46 pp. 4205.0300

Oct 1944 - Vol XXII, No 313

"Study of Spiral Instability from the Basic Design
and the Flight-Test of an Airplane" 55 pp. 2302.0300

Nov 1944 - Vol XXII, No 314 *314 314 314 314*

"On Friction Dampers, Part I, with Intermittent
Shipping" 6 pp. 8710

Nov 1944 - Vol XXII, No 315

"Friction Dampers, Part II, with Continuous Shipping" 8710
5 pp.

Nov 1944 - Vol XXII, No 316

"Friction Dampers, Part III, Optimum Adjust-
ment" 6 pp. 8710

Nov 1944 - Vol XXII, No 317-318

"Research on the Human Body, when Subjected for a
Prolonged Period to Low Atmospheric Pressure,
Part I and II" 35 pp. 30 pp. 5305

RESTRICTED

RESTRICTED

Dec 1944 - Vol XXII, No 319

"Calculation of the Temperature of High-Speed Air Currents" 7 pp. 8710

Dec 1944 - Vol XXII, No 320

"Fluid Resistance of a Thin Equilateral Right-angled Plate Attended by a Pair of Vortices in the Down Stream" 26 pp. 8710

Dec 1944 - Vol XXII, No 321

"The Laminar Boundary Layer in Compressible Fluids with Pressure Gradient" 10 pp. 8710

Dec 1944 - Vol XXII, No 322

"Further Research on the Laminar Boundary Layer in Compressible Fluids" 28 pp. 8710

Jan 1945 - Vol XXIII, No 323

"Application of the Hodograph Method to the Flow of a Compressible Fluid Past a Profile, with Special Reference to Its Lift and Moment" 24 pp. 8710

Feb 1945 - Vol XXIII, No 324

"Changes in Visual Perception at High Altitudes" 24 pp. 5305

Feb 1945 - Vol XXIII, No 325

"On the Velocity Distribution Around an Elliptic Cylinder at High Speeds" 9 pp. 8710

End of "Reports of Aeronautical Research Institute" Abstracts

RESTRICTED

* * *

KIKAI GIJUTSU
 "Mechanical Engineering Techniques"

440*.0000

Published monthly by Gijutsu Zasshi Sha (Technical Publishing Company). Articles on mechanical engineering subjects written by prominent Japanese engineers and physicists.

The following abstracts are from issues of Jan 1943 to Feb 1945 inclusive.

Jan 1943

"The Theory of Hot Air Engines, Part 1" 440*.0400
 The theory of the Ericson, Stirling, and Lehmann hot air engines. 9 pp.

"The Study of Eddies and Counter Flow in a Fluid Passing Through the Impeller Pump, Part 3" 440*.0100
 Energy loss and efficiency drop due to eddies.
 $2\frac{1}{2}$ pp.

"The Survey of Stress by the Use of X-rays" 420*.0237
 The theory of measuring stress in the crystals of various metals. 5 pp.

"The Theory and Application of Machine Tools, Part 21" 440*.0300
 An explanation of different types of milling machines. $6\frac{1}{2}$ pp.

"The Theory of Self-Centering Chucks for Lathes" 2 pp. 440*.0300

"Lubricating Agents for Cutting and Drilling Tools, Part 1" 440*.0300
 Lubricants and cutting compounds for machine working. $6\frac{1}{2}$ pp.

Feb 1943

"Various problems Concerning Fuel Conservation" 420*.0100
 Japan oil situation, theory of combustion, efficiency of oil-burning plants, and other conservation factors. 11 pp.

RESTRICTED

Jul 1943

"Powder-Coal-Burning Internal Combustion Engines, Part I"
 Introduction, construction of this type of engine, and tests conducted. 6 pp. 4406.0400

"The Galitzin Gravity Meter"
 The theory, construction, and use of the Galitzin gravity meter. 7 pp. 4420.0300

"Calculations of the Cutting Time on a Small Lathe, Part 7"
 Time and motion study on the lathe. 5½ pp. 5205.0200

"The Theory and Application of Machine Tools, Part 27"
 Gear-cutting tools, theory and applications. 5 pp. 4406.0300

"The Theory of Biaxial Thermodynamics, Part 3"
 Theory and calculations continued from June issue. 5 pp. 8710

"Basic Knowledge for Air Defense in Factories, Part 4"
 The effect of explosives on concrete structures. 4413.1000

Aug 1943

"Calculations of the Cutting Time on a Small Lathe, Part 8"
 Time and motion study of the lathe. 5 pp. 5205.0200

"The Study of Nomograms, Part 3"
 The mathematical and graphical analysis of alignment charts. 4 pp. 8710

"Labor-Saving Machinery, Part 30"
 Theory involved in transporting materials on cables. 3 pp. 4406.0100

"The Theory of Metallurgy, Part 1"
 Introduction to metallurgy, and the theory of metallic elements. 5 pp. 4205.0235

"Problems Concerned with Lubricating Oils"
 Theory of lubrication, its different applications, and the various problems connected with some lubricating oils. 5 pp. 4203.0506

"Basic Knowledge for Air Defense in Factories, Part 5"
 Effect of explosives upon steel materials. 3 pp. 4413.1000

RESTRICTED

Sep 1943

"Powder-Coal-Burning Internal Combustion Engine," 4406.0400

Part 2"

The fuel-feed system, the compressed air-injection system, and the construction of the combustion chamber. 5 pp.

"Calculations of the Cutting Time on a Small Lathe," 5205.0200

Part 9"

Lathe setup and working time. 6 pp.

"The Study of Nomograms, Part 4" 8710

Mathematical analysis for alignment charts. 3 pp.

"The Theory of Metallurgy, Part 2" 4205.0235

The electronic structure of elements. 6 pp.

"Reinvestigation in the Defects of the Showa Sword" 4401.0700

Study of the steel, method of heat treatment, and the performance tests. 6 pp.

"Basic Knowledge for Air Defense in Factories, Part 6" 4413.1000

Study of the effect of concussion upon buildings. 4 pp.

Oct 1943

"Powder-Coal-Burning Internal Combustion Engine," 4406.0400

Part 3"

Piston and cylinder wear. 3 pp.

"Calculations of the Cutting Time on a Small Lathe," 5205.0200

Part 10"

Study of time and motion in factories. 4 pp.

"The Study of Nomograms, Part 5" 8710

Mathematical and graphical analysis of a three-variable alignment chart. 5 pp.

"Resistance Furnaces -- A Modern Heat-Treatment Method" 4205.1002

General information on the resistance-type furnace. 7 pp.

"Two-Dimensional Calculation for Rectangular Beams" 8710

Shear and bending calculations of rectangular beams. 3 pp.

"Basic Knowledge for Air Defense in Factories, Part 7" 4413.1000

Construction of bomb-proof buildings -- reinforced concrete. 5 pp.

"Designs for Eliminating Backlash in Machine Tools" 4406.0300

1 p.

RESTRICTED

Nov 1943

"The Use of Rare Metals for Military Use"	4205.0705
A general discussion of the following rare metals: zirconium, tantalum, cerium, neodymium, lithium, and strontium. 4 pp.	
"The Study of Barium"	4205.0705
Chemical characteristics, methods of production and its uses. 5 pp.	
"Calculations of the Cutting Time on a Small Lathe, Part II"	5205.0200
A research of time and motion study in factories. 4½ pp.	
"Decarburization"	4205.0235
Experiments to determine the amount of decarburization in steel, under variable conditions. 3 pp.	
"Basic Knowledge for Air Defense in Factories, Part 8"	4413.1000
Bomb-proof building construction -- reinforced concrete. 7 pp.	
"The Theory of Metallurgy, Part 3"	4205.0235
The crystalline structure of elements. 3½ pp.	

Dec 1943

"The Air Standard Cycle of Semi-perfect Gases, Part 1"	4406.0300
Mathematical explanation of the Walker, Otto, Atkinson, Sabathe, and Diesel cycles. 8 pp.	
"Pulverization"	4406.0100
Industrial pulverization of raw materials, such as ores, chemicals, cement materials, etc. 3 pp.	
"The Study of Nomograms, Part 6"	8710
Mathematical and graphical analysis of alignment charts, with numerical examples. 4 pp.	
"The Theory of Metallurgy, Part 4"	4205.0235
The electron theory of alloys. 4 pp.	
"Methods of Increasing Spindle Speeds (rpm)"	4406.0300
Theory of increasing spindle speeds in the textile industry. 4 pp.	
"Basic Knowledge for Air Defense in Factories, Part 9"	4413.1000
A compilation of air defense regulations issued by the Japanese Government. 4 pp.	

RESTRICTED

RESTRICTED

Jan 1944

"The Bending Specifications for Duraluminum Metal"	4205.0205
Theory of bending, bending experiments with duraluminum, its use in aircraft manufacture, etc. 6 pp.	
"The Change in Stress of Steel when the Elastic Limit Is Reached"	4205.0201
Theory of the stress-strain diagram of steel. 1 p.	
"The Theory of Plasticity as Applied to Skrink-fits and Force-fits" 5 pp.	4205.1002
"The Impact Damages of Semispherical Shells"	2302.0300
Experiments conducted for the study of the damages sustained by the spherical-shaped noses of transport planes, and spherical pontoons during crashes. 6 pp.	
"Design Calculations for the Phenomenon of Creep in Machine Parts"	4406.0100
Experimental tests and theory of creep in machine parts. 10 pp.	
"Short-Period Creep Tests in Metals"	4205.0200
And explanation of various types of tests. 4 pp.	
"The Analytical Solution of Various Engineering Problems, Part 1"	4421
General introduction, and the unit conversions in mathematics. 4 pp.	

Feb 1944

"Liquified Gas for High Octane Fuels"	4203.0501
The theory and applications of methane, propane, butane, coal gas, etc as fuel. 3 pp.	4203.0117
"Application of the New Combustion Tables and Graphs"	4203.0501
Combustion theory and formulas on various kinds of fuels. 4 pp.	
"Special Characteristics of the Combustion Chamber in a High-Speed Diesel Engine" 5 pp.	4406.0400
"The Sleeve-Type and Rotary-Type Valve Mechanism in Aircraft Engines"	2302.0200
The theory and application of the valve mechanism. 4 pp.	
"The Air Standard Cycle of Semi-perfect Gases, Part 2"	4406.0300
Mathematical explanation of the Walker, Otto, Atkinson, and Sabathe cycles. 8 pp.	

RESTRICTED

RESTRICTED

"The Analytical Solution of Various Engineering Problems,
Part 2"
Unit conversions in mathematics, and standards. 6 pp. 4421

Mar 1944

"A Method of Self-registering Velocities and Directions
in a Three-Dimensional Flow, Part 1" 8710
The direction and velocity of a fluid flow are
calculated by taking the pressure and electrical
current readings of specially designed instruments.
6 pp.

"Special Characteristics of a Viscous Pump" 4406.0100
Theory and mathematical calculations for a viscous
pump. 7 pp.

"Special Characteristics of Fluid Couplings, Part 1" 4406.0100
The history of fluid couplings, examples of installations,
and some illustrations of foreign fluid
couplings. 4 pp.

"The Analogical Application of Some Solutions to Fluid
Lynamics Problems" 8710
Practical application of fluid dynamics theory.
4 pp.

"The Momentum Formula in Fluid Dynamics and Its Practical
Application" 7 pp. 8710

"The Study of Nomograms, Part 7" 8710
Methods of constructing alignment charts with some
numerical examples. 4 pp.

Apr 1944

"Special Heat-Treating Methods and Their Applications" 4205.1002
A discussion of several heat-treating methods for
steel and other alloys. 6 pp.

"The Granular Structure of Pearlite in High-Carbon
Steel and a Discussion of Its Ductility and Other
Mechanical Properties" 4205.0235
6 pp.

"The Distribution of Phosphorous in Rolled and Forged
Products of Low-Carbon Steels and the Existence of White
Spots in the Crystalline Composition of the Steel" 4205.0233
4 pp.

"A Three-Metal (Train) Journal" 4402.0000
A train journal composed of three metals: white
metal, bronze, and cast iron. 2 pp.

RESTRICTED

RESTRICTED

May 1944

- "The Hammer-Type Crushing Machine" 4406.0100
 A machine employed in crushing coal, shale, mineral ores, bones, shells, lumber, chemicals, etc. 2 pp.
- "Problems in Connection with the Catalytical Manufacture of Sulphuric Acid" 4408.0100
 Physical characteristics, manufacturing techniques, and the industrial use of sulphuric acid. 5 pp.
- "Labor-Saving Machinery, Part 31" 4406.0100
 The theory of transporting materials on cables. 3 pp.
- "The Practical Design for a One-Strand Cableway, Part 1" 4406.0100
 Mathematical calculations involved in setting up a cableway to carry material; eg. material used for cables, the calculation of sag on unlevel ground, construction of supports, etc. 8 pp.
- "The Analytical Solution of Various Engineering Problems, Part 3" 4421
 Mathematical calculation for the quantity of flow through an orifice or a nozzle in fluid dynamics. 5 pp.
- "The Theory of Metallurgy, Part 5" 4205.0235
 The electron theory of alloys. 3 pp.

Jun 1944

- "The Dynamic Study of Wood Materials, Part 1" 4412.0500
 Theory of shear stress in wood caused by compression and tensile loads. 7 pp.
- "The Strengthening of Lumber" 4412.0500
 A discussion of the materials used, the methods of manufacture, and the uses, such as for airplane propellers. 3 pp.
- "New Methods of Strengthening Lumber" 4412.0500
 A discussion of the method and materials used in strengthening lumber for particular uses. 4 pp.
- "Bonding Agents for Lumber Materials" 4412.0500
 A discussion of the theory of bonding lumber, the various bonding agents used, and the methods employed. 3 pp.
- "The Analytical Solution of Various Engineering Problems, Part 4" 4421
 The theory of fluid flow through orifices. 5 pp.

RESTRICTED

RESTRICTED

Translation: "Practical Solution of Torsional Vibration Problems, Part 1"
 A simple introduction to torsional vibrations.
 6 pp.

8710

Aug 1944

"A Method of Self-registering Velocities and Directions in a Three-Dimensional Flow"

The direction and velocity of a fluid flow are calculated by taking the pressure and electrical current readings of specially designed instruments.
 4 pp.

8710

"Efficiency Calculations of a Full-Scale Model of Water Turbines" 5 pp.

4406.0200

"Special Characteristics of Fluid Couplings, Part 2"
 The Vulcan fluid coupling, and the various models of torque converters. 8 pp.

4406.0100

"Momentum Formulas in Hydraulics and Their Applications, Part 2"

8710

Theory of fluid flow through various shapes of orifices and nozzles. 8 pp.

Translation: "Practical Solution of Torsional Problems, Part 3"

8710

Torsional vibrations in crankshafts. 5 pp.

Sep 1944

"Metallic Cementation" 4205.1002
 Various methods of surface-hardening metals, especially steel. Discussions on nitriding, case hardening, etc. 4 pp.

"Heat Treating Light Metal Surfaces" 4205.0301
 Discussion of the numerous ways of heat treating aluminum and magnesium alloys. 6 pp.

"Phosphate Coatings for Rust-proofing Metals" 4205.0240
 An industrial method for rust-proofing steel. 4 pp.

"Chrome-plating to Reduce Frictional Wear" 4205.0240
 The Brinell hardness factor for chrome-plated metals, the industrial process for chrome-plating etc. 6 pp.

"Nitriding Steel" 4205.0240
 Theory of nitriding steel, the properties necessary in steel for nitriding, and industrial nitriding methods. 5 pp.

RESTRICTED

RESTRICTED

Translation: "Practical Solution of Torsional
Vibration Problems, Part 4"
Calculations in free oscillation. 4 pp. 8710

Oct 1944

"Metals which Can Be Combined by Electro-welding"
(Table) 1 p. 4205.0255

"Practical Design for One-Strand Cableways"
Calculations on height of towers, distances
between towers, etc, for carrying a given load.
6 pp. 4406.0100

"An Experiment on the Grinding of Substances in the
Manufacture of Cement" 2 pp. 4413.0500

"Practical Calculations in Gear Displacements"
A method of gear cutting to minimize the amount of
frictional wear in the pinion gear when the number
of teeth in the pinion is much less than the other
gear. 6 pp. 4421

"The Theory of Metallurgy, Part 6"
The electron theory in metallurgy. 4 pp. 4205.0235

"Floor Construction in Chemical Plants"
Sand, wood, metal, cement, and asphalt floors.
2 pp. 4408.0104

Translations:

"The Theory of the Temperature Distribution in Light
Metal Blocks when It Is Exposed to Cold and Hot
Temperature Changes", from German. 3 pp. 4421

"Practical Solution of Torsional Vibration Problems,
Part 5"
Calculations in free oscillation. 4 pp. 8701

Nov 1944

"Basic Characteristics of Fatigue Failures in
Metals" 7 pp. 4205.1000

"The Failure of Steel Under the Combined Torsion and
Bending Stresses"
Theory. 4 pp. 4205.1000

"The Endurance Strength of Machines and Structural
Materials" 7 pp. 4406.0400
4413.1000

"The Dynamic Study of Wood Materials"
Theoretical study. 7 pp. 4412.0500

RESTRICTED

~~RESTRICTED~~

"The Analytical Solution of Various Engineering Problems, Part 5, The Flow of Fluids Through Pipes" 4421
4 pp.

Translation: "Practical Solution of Torsional Vibration Problems, Part 6, Torsional Vibrations in Cranks" 2 pp. 8710

Dec 1944

"The Combustion Performance of the Two-Stage Stoker" 4406.0100
5 pp.

"The Study of Boiler Feed Water"
Prevention of corrosion in entire system, and the forming of scales in feed pipes. 6 pp. 4406.0100

"The Analytical Solution of Various Engineering Problems, Part 7, "The Flow of Fluids Through Pipes" 4421
6 pp.

Translation: "Practical Solution of Torsional Vibration Problems, Part 7, Calculation of the Moment of Inertia of Cranks" 5 pp. 8710

Jan 1945

"The Theory of Fluid Flow"
Fluid flow through different nozzles and orifices. 10 pp. 8710

"The Solex Micrometer, Utilizing Air Pressure"
Theory of operation, application etc. 4 pp. 4420

"The Janney Pump"
Principle and operation. 8 pp. 4406.0100

Feb 1945

"Phase Changes and the Heat Treatment of Steel"
Equilibrium diagram of steel. 8 pp. 4205.1000

"The Theory of Metallurgy, Part 7"
Electron theory of alloys (contd) 6 pp. 4205.0235

Translation: "Practical Solution of Torsional Vibration Problems, Part 7, Calculation of Moment of Inertia of Marine Propellers" 2 pp. 8710

/ End of "Mechanical Engineering Techniques" Abstracts 7

[End of DOCUMENTS BRANCH PERIODICAL ABSTRACTS No 1]

~~RESTRICTED~~

~~CONFIDENTIAL~~